1. (amended) A method of treating flowing water in a water distribution system, comprising:

admixing a sodium chlorite solution with a second solution containing an acid to make a reacted mixture; and

introducing a predetermined amount of the reacted mixture into a water system.

11. (amended) The method of claim 1, wherein the second solution contains PBTC.

12. (amended) The method of claim 1, wherein the second solution is a mixture of mineral acids and antiscalant polymers.

14. (amended) The method of claim 12, wherein the antiscalant polymer is a polymeric compound.

REMARKS

Claims 1-24 are in the application. In response to a restriction requirement, method claims 1-18 were elected for prosecution in this application. Composition claims 19-24 remain in the application as being drawn to non-elected subject matter.

The informalities that were kindly pointed out by the Examiner in both the description and claims have been corrected. Accordingly, the Examiner is asked to withdraw the objection to the disclosure and to rejection of claims 11, 12 and 14 made on page 3 of the Office Action for the reason that the informalities have been corrected. In addition, claim I has been amended to make clear that it is "flowing water" in a distribution system that is being treated.

Applicants respectfully traverse the rejection of claims 1-9 and 11-16 as being anticipated by Schroeder et al. 5,324,477, under 35 U.S.C. § 102(b). Firstly, Schroeder 5,324,477 is non-analogous art. Claims 1-18 are all directed to "[a] method of treating flowing water in a water distribution system" in which a mixture of solutions is introduced "into a water system". In contrast, Schroeder et al. 5,324,477 discloses a solution that combines the effects of a disinfectant, a water hardness stabilizer and a corrosion inhibitor. The combined solution is used in "bottle washing machines, tunnel pasteurizers, re-coolers, filter units, for disinfecting cooling water and for cleaning casks

and containers." There is no disclosure in the patent of adding any solution or mixture into flowing water in a water distribution system.

The Examiner's attention is directed to *In re Oetiker*, 977 F2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992), where the Court stated:

> In order to rely on a reference as a basis for rejection of the applicant's invention, the reference must either be in the field of the applicant's endeavor, or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned. See In re Deminski, 796 Fed. 2d 436, 442 230 USPQ 313, 315 (Fed. Cir. 1986). Patent examination is necessarily conducted by hindsight, with complete knowledge of the applicant's invention, and the courts have recognized the subjective aspects of determining whether an inventor would reasonably be motivated to go to the field in which the Examiner found the reference, in order to solve the problem confronting the inventor. We have reminded ourselves and the PTO that it is necessary to consider "the reality of the circumstances", In Re *Wood*, 599 F2d. 1032, 1036, 202 USPQ 171, 174 (CCPA 1979) – In other words, common sense – in deciding in which fields a person of ordinary skill would reasonably be expected to look for a solution to the problem facing the inventor.

Here, the problem addressed by the invention is to eliminate the mineral and biological substance that cause obstructions in water delivery systems. The claimed method includes introducing a particular compound into a water delivery system.

In *Oetiker*, the Court further stated:

> It has not been shown that a person of ordinary skill, seeking to solve a problem of fastening a hose clamp, would reasonably be expected or motivated to look to fasteners for garments. The combination of elements from non-analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a prima ficie case of obviousness. There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge cannot come from the applicant's invention itself.

Here, a person having no knowledge of applicant's invention would have no reason to consult Schroeder 5,324,477. In other words, a person skilled in the art would not be expected to consult as to how surfaces, etc. are disinfected in search for a solution as to how to eliminate bacterial fouling in a flowing water system.

Another case to consider is *Ruiz v. A.B.Chance Co.*, 234 F.3d 654, 57 USPQ2d 1611 (Fed. Cir. 2000). In that case, the Federal Circuit stated:

> The district court erred in failing to make clear and particular findings as to why the Gregory patents and the Fuller and Ruipier method are within the appropriate scope of the prior art in determining the obviousness of the '368 and '107 patents. The scope for the prior art includes art that is "reasonably pertinent to the particular problem with which the invention was involved." Stratoflex, Inc. v.

> Aeroquip Corp., 713 F2d. 1530, 1535, 218 USPQ 871, 876 (Fed. Cir. 1983). In order to prevent a hindsight-based obviousness analysis, we have clearly established that the relevant inquiry for determining the scope and content of the prior art is whether there is a reason, suggestion, or motivation in the prior art or elsewhere that would have led one of ordinary skill in the art to combine the references.

The rejection of claims 1-9 and 11-16 as being anticipated by Schroeder et al. 5,324,477 also violates the well-established principle that for a prior art reference to anticipate in terms of 35 U.S.C. § 102(b), every element of the claimed invention must be identically shown in a single reference. See *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 7 USPQ2d 1315 (Fed. Cir. 1988); *Corning Glassworks v. Sumitomo Electric USA, Inc.*, 868 F.2d 1251, 9 USPQ2d 1962 (Fed. Cir. 1989) and *Pac-Tec, Inc. v. Amerace Corp.*, 903 F.3d 796, 14 USPQ2d 1871 (Fed. Cir. 1992). Quite clearly, the use of Schroeder 5,324,477 as a reference against the "method of treating water" claims is a "hindsight" approach to locating the prior art. The prior art itself does not set forth the claimed steps being practiced in connection with "treating water in a water distribution system."

In *Diversitech*, the Federal Circuit stated that all elements of the claims, including the preamble, had to be considered when determining whether or not the claim was anticipated by a single piece of prior art.

The court in *Corning Glass* made a similar ruling. The preamble of the claims in issue specified "[a]n optical wave guide." The reference patent disclosed the elements in the body of the claim but in a device that was not "an optical wave guide". The court stated that the preamble was a limitation of the claim that could not be ignored. The claim was not anticipated by the prior art because the prior art was not a "optical wave guide".

Pac-Tec also made it clear that a claim is not anticipated unless every element of the claim, including "the preamble", must be present in a single prior art patent or device.

Here, claims 1-9 and 11-16 specify a "method of treating flowing water in a water distribution system." The steps include "admixing a sodium chlorite solution with a second solution containing an acid to make a reacted mixture." The claims then specify "introducing a predetermined amount of the reactive mixture into a water system." The "water distribution system" and the claim steps are not disclosed by Schroeder 5,324,477. Accordingly, the claims are not anticipated by this patent.

Claim 2 depends from claim 1 and incorporates all of the limitations of claim 1. It further specifies "introducing the reactive mixture into the water to inhibit and/or eliminate bacterial fouling in the system." This function is a part of the claim and there is no disclosure of this function in Schroeder 5,324,477.

Claim 3 also depends from claim 1 and further specifies "introducing the activated mixture into the water for inhibiting and/or removing mineral deposits from the system." Here again, the "system" is a "water distribution system." The step added by claim 3, and the method of claim 3 "as a whole," are not disclosed by Schroeder 5,324,477. Accordingly, the reference does not anticipate the claim.

Claim 4 depends from claim 2 which, as pointed out above, depends from claim 1. Claim 4 adds the step of "introducing the activated mixture into the water for inhibiting and/or removing mineral deposits from the system." This added step, and the combination of steps specified by claim 4, are not disclosed by Schroeder 5,324,477.

Claim 5 depends from claim 1 and further specifies "introducing the activated mixture into the water for reducing or eliminating microorganisms from the system." This step and the combination of steps specified by the claim are not disclosed by Schroeder 5,324,477.

Claim 6 depends from claim 2 and adds the step of "introducing the activated mixture into the water for reducing or eliminating microorganisms from the system" to the combinations of steps specified by claim 2. The step of claim 6 and the combination of steps specified by claim 6 are not disclosed by Schroeder 5,324,477.

Claim 7 depends from claim 3 and adds to the combination of claim 3 the step of "introducing the activated mixture into the water for reducing or eliminating microorganisms from the system." This step and the combination of steps specified by claim 7 are not disclosed by Schroeder 5,324,477.

Claim 8 depends from claim 4 and adds to the combination of claim 4 the step of "introducing the activated mixture for reducing or eliminating microorganisms from the system." The step added by claim 8, and the combination of steps specified by claim 8, are not disclosed by Schroeder 5,324,477.

Claim 9 depends from claim 1 and specifies that "the second component is acidic enough to convert the sodium chlorite into sodium dioxide while remaining unaffected in the reacted mixture and at the same time being a mineral antiscalant." These added features, and the combination of features specified in claim 9, are not disclosed by Schroeder 5,324,477.

Claim 11 depends from claim 1 and specifies that the "second solution contains PBTC." This feature added by claim 11, and the combination of features specified by claim 11, are not disclosed by Schroeder 5,324,477.

Claim 12 depends from claim 1 and specifies that "the second solution is a mixture of mineral acids and antiscalant polymers." This feature, and the combination of features set forth by claim12, are not disclosed by Schroeder 5,324,477.

Claim 13 depends from claim 12 and further specifies that "the antiscalant polymer is a polyacrylic acid." This feature and the combination of features set forth by claim 13 are not disclosed by Schroeder 5,324,477.

Claim 14 depends from claim 12 and adds the feature of "the antiscalant polymer is a polymeric compound." This feature and the combination of features specified by claim 12 are not disclosed by Schroeder 5,324,477.

Claim 15 depends from claim 1 and specifies that "the second compound has the attributes of being acidic enough to convert sodium chlorite into chlorine oxide while remaining unaffected in the reaction mixture." This feature and the combination of features set forth by claim 15 are not disclosed by Schroeder 5,324,477.

Claim 16 depends from claim 1 and specifies "using an anti-scalant, dispersant compound, as an acid activator, to enhance the properties of the reacted mixture towards controlling mineral deposits in the water system." This feature, and the combination of features set forth by claim 16, are not disclosed by Schroeder 5,324,477.

In summary of the foregoing argument, claims 1-9 and 11-16 of this application are not anticipated by Schroeder 5,324,477 because, as pointed out, the patent does not disclose each and all of the limitations that are called for by the claims.

Applicants also traverse the rejection of claims 10, 17 and 18 as being obvious from Schroeder et al. 5,324,477 in view of Christensen et al. 5,424,032, under 35 U.S.C. § 103(a). Claim 10 depends from claim 1 and adds to claim 1 "the second solution is formed by adding 2-phosphonobutane-1, 2, 4-tricarboxylic acid (PBTC) and sodium molybdate di-hydrate and water." By citing Christensen 5,424,032, the Examiner acknowledges that a specific substance specified in this claim is not disclosed by Schroeder 5,324,477. The Examiner cites Christensen 5,424,032 for its disclosure of utilizing "2-phosphonobutane-1, 2, 4-tricarboxylic acid (PBTC) in a water cooling tower." However, it is submitted that Christensen et al. 5,424,032, like Schroeder et al. 5,324,477 does not disclose the combination of features that are specified in claim 10 when that claim is considered "as a whole".

Claim 17 depends from claim 16 and specifies "using a catalyst to enhance conversion of the sodium chlorite into an active biocide, chlorine dioxide." It is submitted that this feature and the combination of features set forth in claim 17 are not disclosed by and are not obvious from the prior art.

Claim 18 depends from claim 17 and specifies that "the catalyst is sodium molybdate." The reference patents do not individually or in combination either show or make obvious the specific combination of steps that are set forth in claim 18.

For the reasons set forth above, it is submitted that claims 1-18 are all allowable over the prior art. Accordingly, early reconsideration and allowance of the application are requested.

Respectfully submitted:

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

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introducing a predetermined amount of the reacted mixture into a water system.

11. (amended) The method of claim 1, wherein the second [compound] solution contains PBTC.

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